

Hidradenitis Suppurativa Complicated by Squamous Cell Carcinoma and Paraneoplastic Neuropathy

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ABSTRACT: Squamous cell carcinoma is a rare complication of chronic, severe, hidradenitis suppurativa. We describe a patient with a 20-year history of extensive perineal hidradenitis suppurativa who presented with subacute muscle weakness and sensory symptoms. He was subsequently diagnosed with squamous cell carcinoma arising in the area of hidradenitis. The neurologic symptoms and signs resolved after complete excision of

the tumor. This presentation is consistent with a paraneoplastic neuropathy, which has not been reported previously in patients with squamous cell carcinoma arising in patients with hidradenitis suppurativa. **KEY INDEXING TERMS:** Hidradenitis suppurativa; Carcinoma; Squamous cell; Paraneoplastic polyneuropathy. [*Am J Med Sci* 2005;329(3):150–152.]

Hidradenitis suppurativa is a chronic inflammatory disorder of the apocrine glands that is often progressive and debilitating.¹ It is found most commonly in the axilla, perineum, external genitalia, and inguinal regions. Many patients eventually require surgery, including incision and drainage procedures and wide excisions.

Rarely, the chronic inflammation results in malignant transformation to squamous cell carcinoma. This complication occurs most commonly in the anogenital region after several decades of disease. In this report, we present a patient with hidradenitis suppurativa for whom a presumed paraneoplastic neuropathy was the initial manifestation of malignant transformation. To our knowledge, this sequence—a squamous cell carcinoma arising in hidradenitis suppurativa and manifesting as a paraneoplastic neuropathy—has not been described previously.

Case Report

A 50-year-old man with a 20-year history of severe perineal hidradenitis suppurativa was hospitalized because of several months of progressive lower extremity weakness. The weakness had worsened substantially during the previous week, and he was

no longer able to walk without assistance. Given the source of infection in the perineal region, the patient was hospitalized because of concern for an epidural abscess.

During the previous 20 years, the patient had undergone numerous excisions of skin involved with hidradenitis, resulting in a left hemiscrotal resection and a diverting colostomy. Past medical history also included hypertension and gastroesophageal reflux for which he took quinapril, hydrochlorothiazide, and esomeprazole. One month prior to admission, his family physician prescribed prednisone (20 mg twice daily) and Augmentin (875 mg twice daily) to treat chronic inflammation and infection associated with his hidradenitis. Two weeks prior to admission, the patient noted several erythematous vesicular lesions bilaterally on his extremities. An outpatient culture of a lesion was negative for varicella-zoster virus, and the lesions resolved spontaneously.

Physical examination was unremarkable with the exception of skin and neurologic findings. In the perineal region, the patient had purulent drainage from sinus tracts with extensive granulation tissue and scarring (Fig. 1). No palpable lymph nodes were noted in the cervical, axillary, or inguinal regions. Deep tendon reflexes were 2+ throughout except for an absent left ankle jerk. Examination of the left leg revealed marked weakness of hip flexion and ankle dorsiflexion, and lesser weakness of other leg muscle groups. The right leg had mild weakness of all muscle groups. There was mild weakness of the triceps bilaterally with other arm muscle groups intact. No fasciculations, rigidity, or clonus were noted. Sensory examination revealed decreased light touch sensation diffusely over the left lower leg, not following any specific peripheral nerve or dermatome distribution. Pinprick sensation and proprioception were intact.

Routine laboratory study findings were normal except for elevated serum blood glucose (257 mg/dL) and elevated erythrocyte sedimentation rate (86 mm/hr). Creatine kinase and thyroid study findings were normal. Magnetic resonance imaging studies of the lumbosacral, thoracic, and cervical spine regions were unremarkable. Analysis of cerebrospinal fluid revealed elevated protein (177 mg/dL), elevated glucose (147 mg/dL), no nucleated cells, and negative culture and cytologic findings. Polymerase chain reaction testing of the cerebrospinal fluid was negative for cytomegalovirus, varicella-zoster virus, herpes simplex viruses 1 and 2, Epstein-Barr virus, and mycobacterium tuberculosis.

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Figure 1. Extensive perineal hidradenitis suppurativa, with scarring, granulation tissue, and sinus tracts.

Electromyography (conducted on the left leg) revealed increased insertional activity with decreased motor unit recruitment and fast firing in the tibialis anterior and peroneus longus muscles, and increased insertional activity in the biceps femoris muscle. These findings were consistent with a polyneuropathy; no myopathic features were present.

Prednisone was stopped on admission, and regular insulin coverage was initiated. Bilateral leg weakness progressed, and the patient was unable to bear weight after 1 week in the hospital. Because of concern about malignant transformation of the hidradenitis suppurativa, a plastic surgeon was consulted. On hospital day 9, the patient underwent surgical excision of perineal tissue that was thought to be suspicious for malignancy. Pathologic examination revealed extensive invasive well-differentiated keratinizing squamous cell carcinoma (Fig. 2). Pelvic computed tomography and magnetic resonance imaging scans were negative for metastasis and neural invasion. On hospital day 17, the patient underwent a wider local excision, which revealed additional areas of squamous cell carcinoma. The surgeon was concerned that this second procedure was not curative because of narrow histopathologic margins. Thus, a third surgery was performed 3 weeks later, with excision of additional tissue at the right inner thigh and groin.

Starting a few days after the first surgery and continuing over the next month, the patient's strength improved rapidly, dysesthesias disappeared, and the patient regained the ability to ambulate without difficulty. Eighteen months later, there is no evidence of tumor recurrence, neurologic examination findings remain normal, and the patient is fully functional. During this period, he underwent debridement and skin grafting on two occasions (3 and 6 months after his initial presentation). He still has small open draining areas of hidradenitis but has declined additional surgery.

Discussion

This case demonstrates two uncommon disease entities, squamous cell carcinoma arising in hidradenitis suppurativa and a probable paraneoplastic syndrome associated with cutaneous squamous cell cancer. To our knowledge, this is the first reported case of a cutaneous squamous cell cancer presenting with a paraneoplastic neuropathy.

Paraneoplastic syndromes refer to signs and symptoms resulting from the effects of tumor on

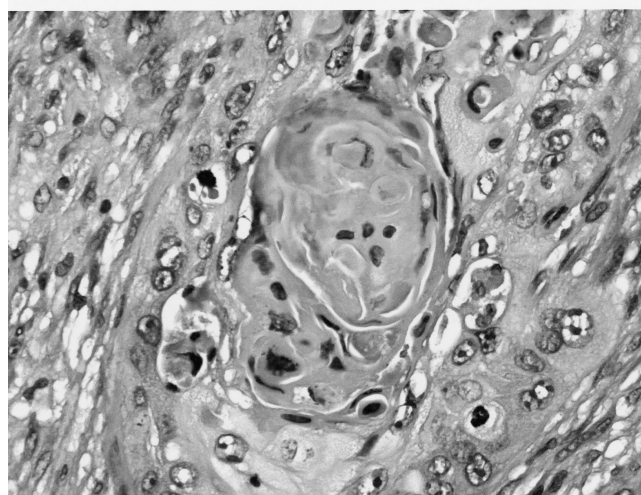
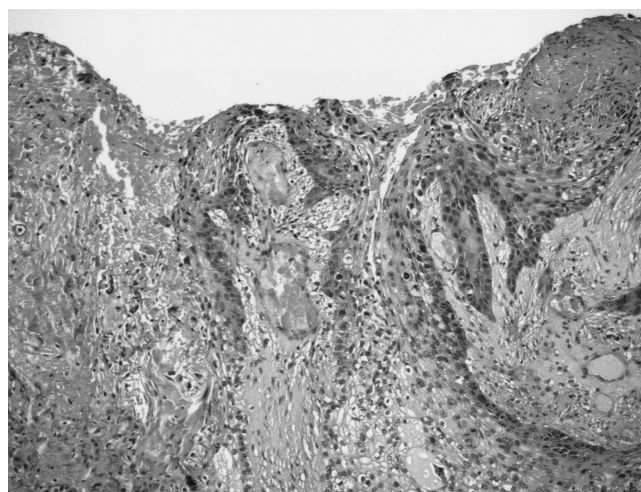


Figure 2. (A) Microscopically, keratinizing squamous cell carcinoma is present along the surface with extension into the underlying dermis (H&E; magnification, 100 \times). (B) Higher magnification illustrates central keratinization, marked cellular pleomorphism, and mitotic activity (H&E; magnification, 400 \times).

distant organ systems. The tumor is postulated to generate growth factors, hormones, antibodies, antigens, and other substances that may affect endocrine, hematologic, or neurologic function. Paraneoplastic disorders may herald the presence of malignancy, and successful treatment of the malignancy usually abolishes paraneoplastic signs and symptoms.

Although commonly associated with internal tumors, paraneoplastic syndromes have been reported rarely with cutaneous malignancies. Paraneoplastic ophthalmoplegia and motor neuropathy has been described in association with melanoma.² Bazex syndrome (a paraneoplastic disorder characterized by palmoplantar hyperkeratosis and psoriasiform rash)³ and paraneoplastic hypercalcemia have been reported with cutaneous squamous cell carcinoma.

ma.⁴⁻⁶ In two of the reports of hypercalcemia, the cancer occurred in a patient with hidradenitis suppurativa.^{5,6}

Neurologic paraneoplastic syndromes can involve the brain and cranial nerves, spinal cord, dorsal-root ganglia, peripheral nerves, and neuromuscular junctions.⁷ We believe that our patient experienced a paraneoplastic neuropathy associated with cutaneous squamous cell carcinoma that complicated hidradenitis suppurativa. His clinical improvement after excision of the tumor is a hallmark of paraneoplastic syndromes. Initially, we considered several other diagnoses. Epidural abscess was excluded by imaging. A myopathy was excluded by the presence of both motor and sensory symptoms, a normal creatine kinase level, and the absence of myopathic abnormalities on electrodiagnostic testing. Moreover, steroid myopathy was implausible because weakness had begun prior to the recent course of prednisone. The increased insertional activity and decreased motor unit recruitment supported a neuropathic process. Varicella-zoster has been associated with sensory and motor neuropathies⁸; however, a cerebrospinal fluid polymerase chain reaction test yielded negative results, viral culture of previous unexplained skin lesion was negative, and the symptoms antedated the skin lesions by several months. We also considered diabetic amyotrophy because of the elevated blood glucose level on admission. However, hyperglycemia resolved after prednisone was stopped, and the patient had no previous history of diabetes. A brief episode of steroid-induced hyperglycemia is unlikely to have caused this degree of neuropathy.

In summary, this case is most consistent with paraneoplastic neuropathy as a presenting manifestation of cutaneous squamous cell cancer arising in an area of chronic hidradenitis suppurativa. We

cannot exclude with absolute certainty a viral or nonparaneoplastic metabolic cause to explain this patient's findings. However, the prompt improvement after excision of the tumor, and our inability to identify another plausible cause, strongly suggest a paraneoplastic origin. Physicians should be alert to the possibility of malignant transformation in cases of chronic extensive hidradenitis suppurativa and should consider occult malignancy when they encounter unexplained neuropathy.

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